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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/667,305	09/23/2003	Nobuyuki Satoh	243012US2	9273
22850	7590	07/01/2005	EXAMINER	
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			PHAM, HAI CHI	
			ART UNIT	PAPER NUMBER
			2861	

DATE MAILED: 07/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/667,305

Applicant(s)

SATO, NOBUYUKI

Examiner

Hai C. Pham

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>02/17/04, 07/23/04</u> | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 9-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Toda (U.S. 6,160,610) in view of Yasuda et al. (JP 07-318314) and Nakayasu et al. (U.S. 5,946,537).

Toda discloses an image forming apparatus having a plurality of light beams emitted by the laser light sources (101a and 101b), which are modulated simultaneously according to image signals and joined together on a photoconductive surface of the drum (107) to form an image, the apparatus comprising means for forming moiré stripes on the photoconductive drum by simultaneously drawing overlapping sets of lines with the respective light beams (Figs. 11A-11D). Toda further teaches computing means and light beam adjusting means based on the detected density in the overlapping regions of

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the drawn lines and the amount of offset at least at three positions along the circumference of the drum (Fig. 12).

Toda fails to teach forming a reference position mark on the photoconductive drum, the overlapping lines being slanted lines, and the detecting means for detecting the position of the moiré stripes.

Yasuda et al. discloses a length measuring device by forming moiré stripes from slanted lines and detecting the position of the moiré fringe using a detection device (light source 14 and detecting element 15) (Fig. 4).

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to provide the test pattern as overlapping slanted lines in the device of Toda as taught by Yasuda et al. The motivation for doing so would have been to obtain a higher number of stripes at the overlapping region such that the correction of the positional offset of the light beams would be easier to carry out.

On the other hand, Nakayasu et al. discloses a printing apparatus with positional offset detection and correction by forming a reference position mark (152-11, Fig. 12) and slanted lines (158-11) such that the detected marks and the computed distance are used to correct for the positional offset in both the main and the sub-scanning directions.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to draw a reference position mark along with the test pattern in the device of Toda as taught by Nakayasu et al. the motivation for doing so

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would have been to allow the correction of the positional offset of the light beams be made in both the main and sub-scanning directions.

4. Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Toda in view of Yasuda et al., Nakayasu et al., and Taka et al. (U.S. 6,360,070)).

Toda, as modified by Yasuda et al. and Nakayasu et al., discloses all the basic limitations of the claimed invention (please refer to the related rejection in the above paragraph 3) except for the reference mark on the drum.

Taka et al. discloses an image forming apparatus for forming a latent image on the photosensitive drum, which is provided with a reference mark (Q) (Fig. 3), the detection of which would be used to determine the position of each of the test patterns (TP1, TP2).

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to provide a reference mark on the photosensitive drum in the modified device of Toda as taught by Taka et al. The motivation for doing so would have been to assure that the printing of the test pattern is in phase with the rotation speed of the photosensitive drum.

Pertinent Prior Art

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

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Nakayasu et al. (U.S. 6,714,748) discloses an image forming apparatus and a skew correction device in which a test pattern is drawn as overlapping lines to form moiré stripes.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hai C. Pham whose telephone number is (571) 272-2260. The examiner can normally be reached on M-F 8:30AM - 5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David L. Talbott can be reached on (571) 272-1934. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



HAI PHAM
PRIMARY EXAMINER

June 25, 2005